

CLAIMS

1. A method for processing an electronic document adapted for delivery to one or more recipients, the electronic document including a header and a body, the method comprising:

5 processing the electronic document to identify semantic foci;

creating a meta-content index corresponding to said semantic foci; and

combining said meta-content index with the header and the body to provide an enhanced document.

10 2. The method of claim 1, including sending the enhanced electronic document to said one or more recipients.

15 3. The method of claim 1, wherein said electronic document comprises an electronic mail document.

4. The method of claim 2, including converting said electronic mail document to a markup language format, and wherein said meta-content index comprises one or more objects expressed in said markup language adapted for presentation with body in said enhanced document.

20 5. The method of claim 3, wherein said electronic document comprises a document in a format compliant with a standard MIME format.

6. The method of claim 1, wherein said semantic foci includes at least one date within the body, and including:

25 identifying a document date within the header; and

associating a presentation attribute to said at least one date in said meta-content index, the presentation attribute based upon a temporal relationship between the document date and the at least one date.

30 7. The method of claim 6, including converting the at least one date to canonical form.

8. The method of claim 6, wherein the presentation attribute comprises color.

9. The method of claim 1, wherein said semantic foci includes a plurality of types of information, the plurality of types including one or more of email addresses, URLs, dates, currency values, organization names, names of people, names of places, names of products, names of drugs, names of sports teams, names of diseases, and phone numbers.

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10. The method of claim 9, wherein said meta-content index comprises entries sorted by the plurality of types.

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11. The method of claim 9, wherein in one of the plurality of types comprises currency values, and including converting the currency values to a canonical form.

12. The method of claim 9, including annotating said semantic foci within said body.

13. The method of claim 9, including color coding said electronic version of said index and said semantic foci in said body according to said plurality of types.

14. The method of claim 1, including associating hyperlinks with said semantic foci, and incorporating said hyperlinks into one of said meta-content index and said body.

20 15. The method of claim 1, wherein said meta-content index comprises labels facilitating parsing of the enhanced document.

16. The method of claim 1, wherein said electronic document includes an attachment, and said processing includes analysis of the attachment.

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17. The method of claim 1, including generating a summary of said electronic document, and including the summary in the enhanced document.

30 18. The method of claim 1, wherein said electronic document includes an attachment, and including generating a summary of the attachment, and including the summary in the enhanced document.

19. The method of claim 1, wherein said header includes text suggesting a key subject, and including generating a summary of said electronic document based upon the key subject, and including the summary in the enhanced document.

5 20. The method of claim 1, wherein said meta-content index includes a summary of all or part of the electronic document.

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21. A method for processing an electronic document adapted for delivery to one or more recipients, the electronic document including a header and a body, the method comprising:

5 performing meta-content extraction of semantic foci within said electronic document, the semantic foci comprising a plurality of types of information including one or more of email addresses, URLs, dates, currency values, organization names, names of people, names of places, names of products, names of drugs, names of sports teams, names of diseases, and phone numbers;

10 creating a meta-content index of the electronic document based upon said extracted semantic foci;

arranging the meta-index according to said plurality of types;

15 combining said meta-content index with said header and said body to provide an enhanced document; and

20 sending said enhanced document to said one or more recipients via a communication network.

22. The method of claim 21, wherein said electronic document comprises an electronic mail document.

20 23. The method of claim 22, including converting said electronic mail document to a markup language format, and wherein said meta-content index comprises one or more objects expressed in said markup language adapted for presentation with body in said enhanced document.

25 24. The method of claim 23, wherein said electronic document comprises a document in a format compliant with a standard MIME format.

25 25. The method of claim 21, wherein said semantic foci includes at least one date within the body, and including:

30 identifying a document date within the header; and

associating a presentation attribute to said at least one date in said index, the presentation attribute based upon a temporal relationship between the document date and the at least one date.

26. The method of claim 25, including converting the at least one date to canonical form.

27. The method of claim 25, wherein the presentation attribute comprises color.

5 28. The method of claim 21, wherein in one of the plurality of types comprises currency values, and including converting the currency values to a canonical form.

29. The method of claim 21, including annotating said semantic foci within said body.

10 30. The method of claim 21, including color coding said electronic version of said index and said semantic foci in said body according to said plurality of types.

31. The method of claim 21, including associating a hyperlink with one of said extracted semantic foci, and incorporating said hyperlink into one of said meta-content index and said body.

32. The method of claim 21, including adding presentation attributes to entries in said meta-content index according to said plurality of types.

20 33. The method of claim 21, including adding presentation attributes to entries in said meta-content index within one of said plurality of types, according to relationships among said entries within said one of said plurality of types.

34. The method of claim 21, wherein said meta-content index comprises labels facilitating 25 parsing of the enhanced document.

35. The method of claim 21, wherein said electronic document includes an attachment, and said meta-content extraction includes analysis of the attachment.

30 36. The method of claim 21, including generating a summary of said electronic document, and including the summary in the enhanced document.

37. The method of claim 21, wherein said electronic document includes an attachment, and including generating a summary of the attachment, and including the summary in the enhanced document.

5 38. The method of claim 21, wherein said header includes text suggesting a key subject, and including generating a summary of said electronic document based upon the key subject, and including the summary in the enhanced document.

39. The method of claim 21, wherein said meta-content index includes a summary of all or part of the electronic document.

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40. An article of manufacture comprising:
a computer readable medium having computer readable program code which upon
execution provides a data processing method including:
5 processing an electronic document which includes a header and a body to identify
semantic foci;
creating a meta-content index corresponding to said semantic foci; and
combining said meta-content index with the header and the body to provide an enhanced
document.

41. The article of claim 40, wherein said method includes preparing said enhanced document
for delivery to one or more recipients.

42. The article of claim 40, wherein said method includes sending the enhanced electronic
document to said one or more recipients.

43. The article of claim 40, wherein said electronic document comprises an electronic mail
document.

20 44. The article of claim 43, wherein said method includes converting said electronic mail
document to a markup language format, and wherein said meta-content index comprises one or
more objects expressed in said markup language adapted for presentation with the body in said
enhanced document.

25 45. The article of claim 43, wherein said electronic document comprises a document in a
format compliant with a standard MIME format.

46. The article of claim 40, wherein said semantic foci includes at least one date within the
body, and wherein said method includes:
30 identifying a document date within the header; and

associating a presentation attribute to said at least one date in said meta-content index, the presentation attribute based upon a relationship between the document date and the at least one date.

5 47. The article of claim 46, wherein said method includes converting the at least one date to canonical form.

48. The article of claim 46, wherein the presentation attribute comprises color.

49. The article of claim 40, wherein said semantic foci includes a plurality of types of information, the plurality of types including one or more of email addresses, URLs, dates, currency values, organization names, names of people, names of places, names of products, names of drugs, names of sports teams, names of diseases, and phone numbers.

50. The article of claim 49, wherein said meta-content index comprises entries sorted by the plurality of types.

51. The article of claim 49, wherein in one of the plurality of types comprises currency values, and wherein said method includes converting the currency values to a canonical form.

20 52. The article of claim 49, wherein said method includes annotating said semantic foci within said body.

25 53. The article of claim 49, wherein said method includes color coding said electronic version of said index and said semantic foci in said body according to said plurality of types.

54. The article of claim 40, wherein said method includes associating hyperlinks with said semantic foci, and incorporating said hyperlinks into one of said meta-content index and said body.

30 55. The article of claim 40, wherein said meta-content index comprises labels facilitating parsing of the enhanced document.

56. The article of claim 40, wherein said electronic document includes an attachment, and
said processing includes analysis of the attachment.

57. The article of claim 40, wherein said method includes generating a summary of said
5 electronic document, and including the summary in the enhanced document.

58. The article of claim 40, wherein said electronic document includes an attachment, and
wherein said method includes generating a summary of the attachment, and including the
summary in the enhanced document.

59. The article of claim 40, wherein said header includes text suggesting a key subject, and
wherein said method includes generating a summary of said electronic document based upon the
key subject, and including the summary in the enhanced document.

60. The article of claim 40, wherein said meta-content index includes a summary of all or
part of the electronic document.

61. A system for enhancing an electronic document including a header and a body in a computer comprising the acts of:
5 a computer, including an electronic mail client having resources for composing an electronic document having a header and a body, and for sending electronic documents to one or more recipients; and resources coupled with the electronic mail client in the computer which process said electronic document to identify semantic foci within the document; create a meta-content index corresponding to said semantic foci; and combine said meta-content index with the header and the body to provide an enhanced document.

62. The system of claim 61, wherein said resources provide said enhanced document to said email client for delivery to one or more recipients.

63. The system of claim 61, wherein said electronic document comprises an electronic mail document.

64. The system of claim 61, wherein said resources convert said electronic mail document to a markup language format, and wherein said meta-content index comprises one or more objects expressed in said markup language adapted for presentation with the body in said enhanced document.

65. The system of claim 61, wherein said electronic document comprises a document in a format compliant with a standard MIME format.

66. The system of claim 61, wherein said semantic foci includes at least one date within the body, and wherein said resources:
25 identify a document date within the header; and
30 associate a presentation attribute to said at least one date in said meta-content index, the presentation attribute based upon a relationship between the document date and the at least one date.

67. The system of claim 66, wherein said resources convert the at least one date to canonical form.

68. The system of claim 66, wherein the presentation attribute comprises color.

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69. The system of claim 61, wherein said semantic foci includes a plurality of types of information, the plurality of types including one or more of email addresses, URLs, dates, currency values, organization names, names of people, names of places, names of products, names of drugs, names of sports teams, names of diseases, and phone numbers.

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70. The system of claim 69, wherein said meta-content index comprises entries sorted by the plurality of types.

71. The system of claim 69, wherein in one of the plurality of types comprises currency values, and wherein said resources convert the currency values to a canonical form.

72. The system of claim 69, wherein said resources annotate said semantic foci within said body.

20 73. The system of claim 69, wherein said resources color code said electronic version of said index and said semantic foci in said body according to said plurality of types.

74. The system of claim 61, wherein said resources associate hyperlinks with said semantic foci, and incorporate said hyperlinks into one of said meta-content index and said body.

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75. The system of claim 61, wherein said meta-content index comprises labels facilitating parsing of the enhanced document.

76. The system of claim 61, wherein said electronic document includes an attachment, and
30 said resources which process the electronic document analyze the attachment.

77. The system of claim 61, wherein said resources which process the electronic document generate a summary of said electronic document, and include the summary in the enhanced document.

5 78. The system of claim 61, wherein said electronic document includes an attachment, and wherein said resources which process the electronic document generate a summary of the attachment, and include the summary in the enhanced document.

10 79. The system of claim 61, wherein said header includes text suggesting a key subject, and wherein said resources which process the electronic document generate a summary of said electronic document based upon the key subject, and include the summary in the enhanced document.

15 80. The system of claim 61, wherein said meta-content index includes a summary of all or part of the electronic document.

81. An enhanced electronic document produced according to a method for processing an electronic document adapted for delivery to one or more recipients, the electronic document including a header and a body, the method comprising:

5 processing the electronic document to identify semantic foci within the electronic document;

creating a meta-content index corresponding to said semantic foci; and

combining said meta-content index with the header and the body to provide said enhanced document.

10 82. The enhanced electronic document of claim 81, wherein said electronic document comprises an electronic mail document.

15 83. The enhanced electronic document of claim 82, wherein the method includes converting said electronic mail document to a markup language format, and wherein said meta-content index comprises one or more objects expressed in said markup language adapted for presentation with body in said enhanced document.

20 84. The enhanced electronic document of claim 83, wherein said electronic document comprises a document in a format compliant with a standard MIME format.

25 85. The enhanced electronic document of claim 81, wherein said semantic foci includes at least one date within the body, and the method includes:

identifying a document date within the header; and

associating a presentation attribute to said at least one date in said meta-content index,

25 the presentation attribute based upon a temporal relationship between the document date and the at least one date.

30 86. The enhanced electronic document of claim 85, wherein the method includes converting the at least one date to canonical form.

87. The enhanced electronic document of claim 85, wherein the presentation attribute comprises color.

88. The enhanced electronic document of claim 81, wherein said semantic foci includes a plurality of types of information, the plurality of types including one or more of email addresses, URLs, dates, currency values, organization names, names of people, names of places, names of products, names of drugs, names of sports teams, names of diseases, and phone numbers.

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89. The enhanced electronic document of claim 88, wherein said meta-content index comprises entries sorted by the plurality of types.

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90. The enhanced electronic document of claim 88, wherein in one of the plurality of types comprises currency values, and the method includes converting the currency values to a canonical form.

91. The enhanced electronic document of claim 88, wherein the method includes annotating said semantic foci within said body.

92. The enhanced electronic document of claim 88, wherein the method includes color coding said electronic version of said index and said semantic foci in said body according to said plurality of types.

20 93. The enhanced electronic document of claim 81, wherein the method includes associating hyperlinks with said semantic foci, and incorporating said hyperlinks into one of said meta-content index and said body.

25 94. The enhanced electronic document of claim 81, wherein said meta-content index comprises labels facilitating parsing of the enhanced document.

95. The enhanced electronic document of claim 81, wherein said electronic document includes an attachment, and said processing includes analysis of the attachment.

30 96. The enhanced electronic document of claim 81, wherein said method includes generating a summary of said electronic document, and including the summary in the enhanced document.

97. The enhanced electronic document of claim 81, wherein said electronic document includes an attachment, and wherein said method includes generating a summary of the attachment, and including the summary in the enhanced document.

5 98. The enhanced electronic document of claim 81, wherein said header includes text suggesting a key subject, and wherein said method includes generating a summary of said electronic document based upon the key subject, and including the summary in the enhanced document.

10 99. The enhanced electronic document of claim 81, wherein said meta-content index includes a summary of all or part of the electronic document.